

**AMENDMENTS TO THE CLAIMS:**

The present listing of claims replaces all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently amended) A method for the production of heterologous proteinaceous substances in plant material, comprising the steps of:

culturing, in a culture medium, plant material transformed with a construct encoding a signal peptide operably linked to a protein, that produces heterologous proteinaceous substances in a culture medium,

wherein the plant material is protonema tissue, transformed with a construct encoding a signal peptide operably linked to a protein, that produces heterologous proteinaceous substances; and

obtaining secreted heterologous proteinaceous substances from the culture medium without disrupting producing tissues or cells,

wherein the plant material is protonema tissue selected from the group consisting of *Physcomitrella patens*, *Marchantia polymorpha*, *Ceratodon purpureus*, and *Funaria hygrometrica*.

2. (Previously presented) The method according to claim 1, characterized in that proteinaceous substances released into the culture medium are biologically active.

3. (Previously presented) The method according to claim 1, characterized in that the culture medium is free from sugars, vitamins and phytohormones.

4-16. (Canceled)

17. (Currently amended) A method for the production of heterologous proteinaceous substances in plant material, comprising the steps of:

culturing, in a culture medium, photosynthetically-active plant material transformed with a construct encoding a signal peptide operably linked to a protein, that produces heterologous proteinaceous substances in a culture medium, wherein the plant material is protonema tissue, transformed with a construct encoding a signal peptide operably linked to a protein, that produces heterologous proteinaceous substances; and

obtaining secreted heterologous proteinaceous substances from the culture medium without disrupting producing tissues or cells,

wherein the photosynthetically-active plant material is protonema tissue selected from the group consisting of *Physcomitrella patens*, *Marchantia polymorpha*, *Ceratodon purpureus*, and *Funaria hygrometrica*.

18-21. (Canceled)